Note II. This small cylinder x''' is thus composed: One half of copper and the other half iron, each having the form of a half-cylinder. The surfaces of the two pieces in contact with each have the figure of a rectangular plane, dividing the cylinder into two equal parts, passing through its axis.

Note III. To construct a telegraphic machine of any size whatever the measure of the lever $a\,b$ may be found by the following trigonometrical formula: If 2 be the length, $e\,f$: $\measuredangle$ the half of the angle of the oscillation of the pendulum, $a\ b\ c\ d\ u$ the cross-lever, $f' \times : p$ the portion of the said line comprised between the jointing, $f'\,f$: x the unknown line $f'\,e'$, we shall have $x = x$ sine $2\frac{1}{2} \measuredangle (p^2 . 2^a\, p) + a^2\, r$.

In short, the advantages of my invention are rapidity of transmission of fac-similes of writings, drawings, or ciphers; secrecy of the correspondence; the transmitting different dispatches at the same time and with a single wire; the width of the dispatches in proportion to dimension of machinery; impossibility of error in transmission; continuity of work, as dispatches can be put on the cylinder without interrupting the movement; regularity in the movement of the machines kept up by terrestrial attraction, and by the continuous action of the telegraphic current.

I do not claim the general use of electricity for producing fac-similes upon chemically-prepared paper or other material; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. The mode of rapidly transmitting the fac-similes of writings, drawings, ciphers, and arbitrary signs, in colored characters, upon ordinary white or chemically-prepared paper, substantially as described.

2. The mode of receiving and transmitting different dispatches at the same time and with a single wire, as described.

3. The use of local piles with circuit always closed for the production of the characters on chemically-prepared paper, as described.

Paris on the 20th July, 1857.

GIOVANNI CASELLI.

Witnesses:

GEO. HUTTON,

JNO. WALLER.